

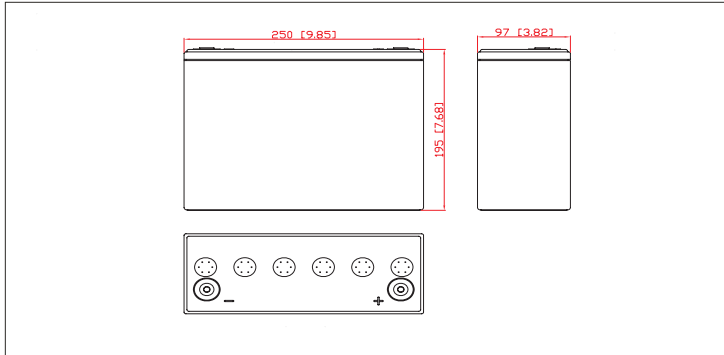
**Model: TT12V38**

TT SERIES

**General Features**

The products are used as standby power for communication, power, military and broadcast and television system. They possess precise ABS heat seal technology between container and lid and patented post seal structure. The design float life is 12 years at 20°C(68°F).

**Dimension**



**Parameter**

Nominal Voltage	12V
Rated Capacity	38Ah (10hour rate) to 1.80V/cell @25°C(77°F)
Weight	13.7kg
Internal Resistance	About 11.7mohm
Operating Temperature Range	Discharge: -40°C~50°C(-40°F~122°F)
	Charge: -20°C~50°C(-4°F~122°F)
	Storage: -20°C~40°C(-4°F~104°F)
Recommended temperature	15°C~25°C(59°F~77°F)
Float Voltage	2.25V/cell@25°C(77°F)
Recommended Maximum Charging Current Limit	10A
Equalize and Cycle Service	2.35V~2.40V@25°C(77°F)
Self Discharge	The residual capacity is above 87% after 90 days storage(25°C/77°F)
Terminal	M6
Container Material	ABS

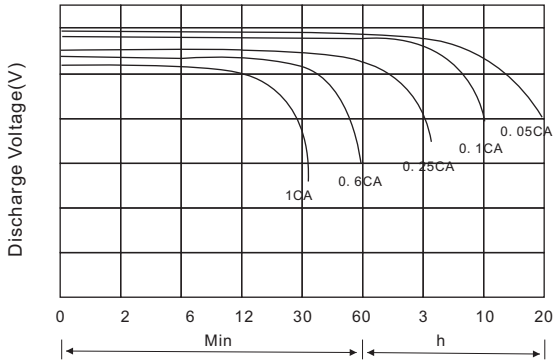
**Constant Current Discharge Characteristics Unit: A (25°C, 77°F)**

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	137	73.8	44.7	32.4	26.2	15.1	10.9	8.6	7.22	6.20	4.76	3.92	3.30	2.07	1.72
1.67V	129	71.2	43.9	32.2	26.0	14.9	10.7	8.5	7.18	6.15	4.71	3.87	3.30	2.05	1.71
1.70V	128	69.9	43.3	31.9	25.9	14.8	10.7	8.5	7.07	6.10	4.66	3.86	3.26	2.05	1.71
1.75V	117	67.7	42.9	31.7	25.4	14.5	10.5	8.3	7.03	6.05	4.61	3.84	3.26	2.04	1.71
1.80V	105	63.1	41.1	30.4	24.8	14.3	10.5	8.3	6.88	5.93	4.56	3.80	3.24	2.02	1.70
1.83V	100	57.9	40.3	29.4	23.8	14.2	10.1	8.0	6.66	5.72	4.52	3.66	3.08	2.02	1.68
1.85V	94.3	56.1	37.5	28.2	23.0	13.6	9.8	7.8	6.50	5.60	4.37	3.63	3.04	1.97	1.67

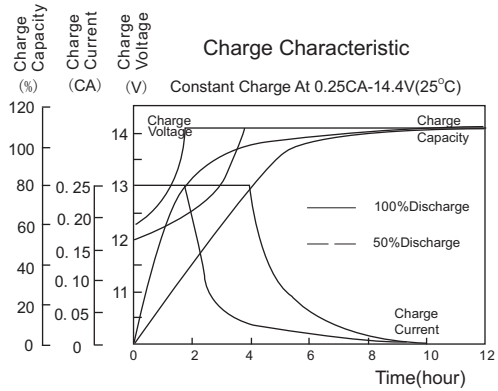
**Discharge Data with Constant Power Unit: W (25°C, 77°F)**

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	229	129	81.1	60.8	49.3	28.4	20.7	16.4	13.8	11.9	9.21	7.60	6.39	4.09	3.43
1.67V	221	127	80.4	60.4	49.0	28.3	20.5	16.4	13.8	11.8	9.13	7.53	6.39	4.08	3.43
1.70V	220	126	80.4	60.4	48.8	28.1	20.5	16.3	13.7	11.8	9.06	7.45	6.33	4.07	3.42
1.75V	208	125	79.7	60.2	48.1	28.0	20.2	16.3	13.7	11.8	8.92	7.45	6.33	4.06	3.42
1.80V	191	118	78.2	58.8	48.0	27.9	20.2	16.2	13.4	11.6	8.92	7.45	6.31	4.06	3.41
1.83V	185	108	76.7	57.0	46.0	27.6	19.7	15.6	13.1	11.3	8.92	7.24	6.12	4.05	3.39
1.85V	175	105	71.5	54.7	44.6	26.7	19.1	15.4	12.8	11.0	8.62	7.18	6.05	3.98	3.36

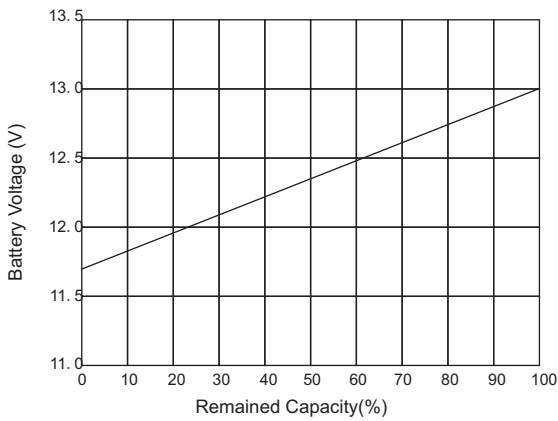
Terminal Voltage(V) and Discharge Time (25°C, 77°F)



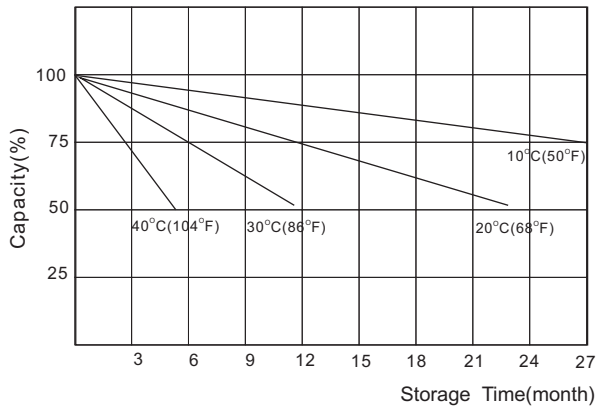
Battery Voltage and Charge Time



Relationship of OCV and state of charge



Capacity Retention Characteristic



Charging Procedure

Application	Charge Voltage (V/Cell)			Max. Charge Current (A)
	Temperature (°C)	Set Point	Allowable Range	
Cycle	25	2.40	2.35~2.45	0.25C
Standby	25	2.25	2.23~2.27	

Discharge Current VS. Discharge Voltage

Final Discharge Voltage (V/Cell)	1.80	1.70	1.55	1.30
Discharge Current (A)	I<0.2C	0.2C<I<0.5C	0.5C<I<1.0C	I>1.0C

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